

# 3.8

## Graphing the Line through a Given Point with a Given Slope

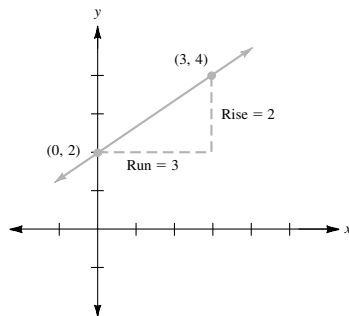
### • Example 1

Graph the line with slope  $\frac{2}{3}$  and  $y$ -intercept 2.

Since the  $y$ -intercept is 2, the line passes through the point  $(0, 2)$ . Since the slope is  $\frac{2}{3}$ , we move 2 units up each time we move 3 units to the right.

Thus the point  $(0 + 3, 2 + 2) = (3, 4)$  is on the line. We now draw the line through  $(0, 2)$  and  $(3, 4)$ .

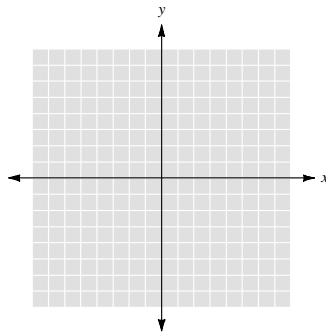
The line rises from left to right because the slope is positive.



The equation of this line is  $y = \frac{2}{3}x + 2$ .

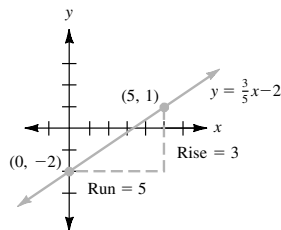
### • • • CHECK YOURSELF 1

Graph the equation of a line with slope  $\frac{3}{5}$  and  $y$ -intercept  $-2$ .



### • • • CHECK YOURSELF ANSWER

1.



# 3.8 Exercises

Name \_\_\_\_\_

Section \_\_\_\_\_

Date \_\_\_\_\_

## A N S W E R S

1. \_\_\_\_\_

2. \_\_\_\_\_

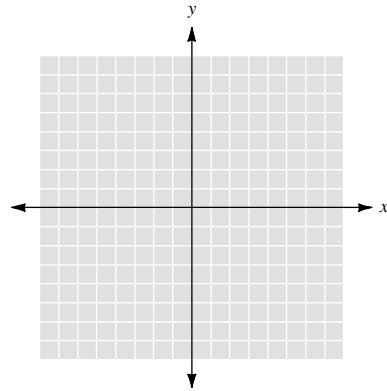
3. \_\_\_\_\_

4. \_\_\_\_\_

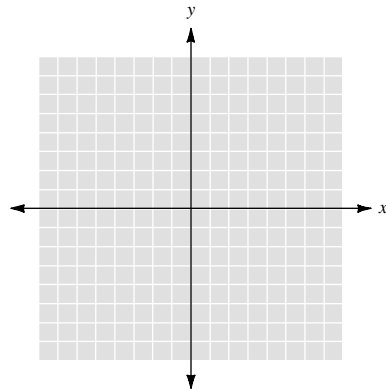
5. \_\_\_\_\_

Graph the line with slope  $m$  and passing through the given point.

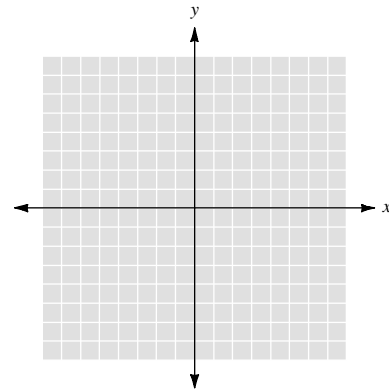
1.  $m = 4$ , passes through  $(1, 7)$



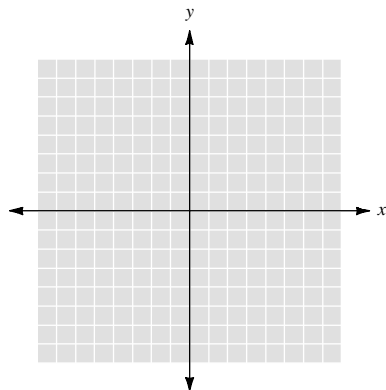
2.  $m = -2$ , passes through  $(-2, -3)$



3.  $m = -1$ , passes through  $(8, 12)$



4.  $m = 0$ , passes through  $(0, 12)$



5.  $m = 3$ , passes through  $(-4, -6)$

